

CLAIMS

1. Method for handling a data object that is to be transmitted over a link (39, 40, 41, 42), said data object being divided into at one least data unit,
5 c h a r a c t e r i s e d by:
- handling the data unit that is in turn to be transmitted over the link (39, 40, 41, 42), differently depending on where a buffer fill level in a buffer (33, 34, 35, 36, 37, 38) preceding the link (39, 40, 41, 42) is in relation to
10 at least one buffer threshold (51, 52, 53, 54, 55, 56, 57, 58, 59) in order to minimise end-to-end delay.
2. Method according to claim 1, c h a r a c t e r i z e d by using a more secure link, e.g. by using a coding scheme for security coding of the data unit giving higher security for
15 the link, if the buffer fill level is below the at least one buffer threshold (51, 52, 53, 54, 55, 56, 57, 58, 59), than if the buffer fill level is above said at least one buffer threshold (51, 52, 53, 54, 55, 56, 57, 58, 59).
3. Method according to any of the claims 1 or 2,
20 c h a r a c t e r i z e d by using coding schemes for security coding of the data unit giving higher security when the radio quality is worse than at least one radio quality threshold, than when the radio quality is better than said at least one radio quality threshold.
- 25 4. Method according to any of the claims 1 to 3, c h a r a c t e r i z e d by receiving acknowledgement more often, by e.g. polling more often for acknowledgement, when the buffer fill level is below the at least one buffer threshold (51, 52, 53, 54, 55, 56, 57, 58, 59) than when the
30 buffer fill level is above the at least one buffer threshold (51, 52, 53, 54, 55, 56, 57, 58, 59).

5. Method according to any of the claims 1 to 4, characterized by giving a higher priority for the data units using said buffer compared to other data units sharing the same link, when the buffer fill level is
5 below the at least one buffer threshold (51, 52, 53, 54, 55, 56, 57, 58, 59) than when the buffer fill level is above the at least one buffer threshold (51, 52, 53, 54, 55, 56, 57, 58, 59).

6. Method according to any of the claims 1 to 5,
10 characterized by using incremental redundancy for the transmission only when the buffer fill level is above the at least one buffer threshold (51, 52, 53, 54, 55, 56, 57, 58, 59), when the method is used in an EGPRS system.

7. Method according to any of the claims 1 to 6,
15 characterized by moving the upper part of the buffer above at least one threshold to another buffer; and by treating the lower remaining part of the buffer below the at least one threshold as if the upper part had moved, already before the actual moving has taken place.

20 8. Unit arranged to handle a data object that is to be transmitted over a link (39, 40, 41, 42), said data object being divided into at one least data unit, characterized in that the unit is arranged to handle the data unit that is in turn to be transmitted over
25 the link (39, 40, 41, 42), differently depending on where a buffer fill level in a buffer (33, 34, 35, 36, 37, 38) preceding the link (39, 40, 41, 42) is in relation to at least one buffer threshold (51, 52, 53, 54, 55, 56, 57, 58, 59) in order to minimise end-to-end delay.

30 9. Unit according to claim 8, characterized in that the unit is arranged to using a more secure link, e.g. by using a coding scheme for security coding of the data unit giving higher security, if the buffer fill level is

below the at least one buffer threshold (51, 52, 53, 54, 55, 56, 57, 58, 59), then if the buffer fill level is above said at least one buffer threshold (51, 52, 53, 54, 55, 56, 57, 58, 59).

5 10. Unit according to any of the claims 8 or 9, characterized in that the unit is arranged to use coding schemes for security coding of the data unit giving higher security when the radio quality is worse than at least one radio quality threshold, than when the radio
10 quality is better than said at least one radio quality threshold.

11. Unit according to any of the claims 8 to 10, characterized by in that the unit is arranged to receiving acknowledgement more often, e.g. by polling for
15 acknowledgement more often, when the buffer fill level is below the at least one buffer threshold (51, 52, 53, 54, 55, 56, 57, 58, 59) than when the buffer fill level is above the at least one buffer threshold (51, 52, 53, 54, 55, 56, 57, 58, 59).

20 12. Unit according to any of the claims 8 to 11, characterized in that the unit is arranged to give a higher priority for the data units using said buffer compared to other data units sharing the same link, when the buffer fill level is below the at least one buffer threshold
25 (51, 52, 53, 54, 55, 56, 57, 58, 59) than when the buffer fill level is above the at least one buffer threshold (51, 52, 53, 54, 55, 56, 57, 58, 59).

13. Unit according to any of the claims 8 to 12, characterized in that the unit is arranged to
30 move the upper part of the buffer above at least one threshold to another buffer; and arranged to treat the lower remaining part of the buffer below the at least one

threshold as if the upper part had moved, already before the actual moving has taken place.

14. Unit in an EGPRS system according to any of the claims 8 to 13, characterized in that the unit is
5 arranged to use incremental redundancy for the transmission only when the buffer fill level is above the at least one buffer threshold (51, 52, 53, 54, 55, 56, 57, 58, 59).

15. Unit in a GPRS or an EGPRS system according to any of the claims 8 to 14, characterized in that the
10 buffer (33, 34, 35, 36, 37, 38) is a MS buffer or PCF buffer.

16. Unit in a GPRS or an EGPRS system according to any of the claims 8 to 15, characterized in that the unit is a base station, a base station controller, a serving
15 GPRS support node or similar.

17. Unit in a UMTS system according to any of the claims 8 to 15, characterized in that the unit is a radio network controller.